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Transforming industry

The Enabling Technologies for Digitalization

Proud partners

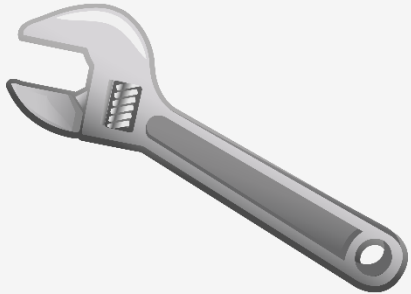Sitech Services
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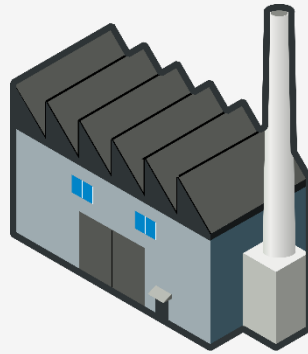
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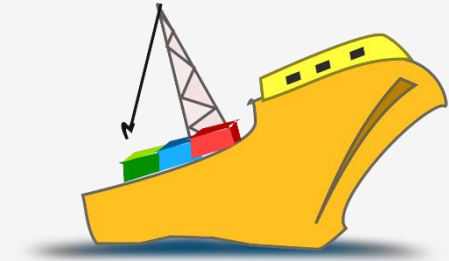Transforming industry

Problem Domains

Maintenance

Production

Safety Management

Supply Chain Management

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Development Aspects

Assets
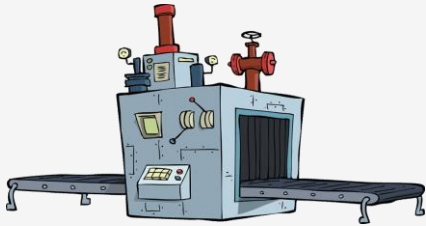
People

Feedstock

Energy

Spare Parts

Site

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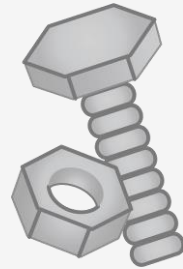
Enabling Technologies

Identified 11 enabling technologies:
Artificial Intelligence (AI)
Autonomous Robots (RO)
Extended Reality (XR)
Simulation (SIM)
Industrial Internet of Things (IIoT)
Big Data Analytics (BDA)
Horizontal and Vertical System Integration (HVI)
Cloud Computing (CC)
Additive Manufacturing (AM)
Cybersecurity (CS)
5G

Application: Predictive Maintenance

Digital industry

Focus – Infographic

04 Focus Infographic

Infographic The digital transformation is making ever greater advances and permeating the value chains of industry. Here are some examples.

**Predictive maintenance**
In the steam cracker, where many important basic chemical building blocks for subsequent use in production at BASF are produced, several thousand sensors capture process data such as pressure and temperature around the clock. This information is evaluated by analysis software to predict the best time for maintenance work, avoiding unplanned downtime and operating the plant in the best possible way.

Digital logistics
Autonomous and automatically driven vehicles are directed around the plant site by transponders in the ground. This saves time. At BASF in Ludwigshafen, it currently takes around 22 hours for a conventional railway tank car to be delivered from the plant's train station to one of more than 150 loading stations. With autonomously driven, driverless vehicles, the delivery takes only an hour.

Information on the ground
At production plants, increasing use is being made of industry-specific tablets that make it possible to access information on-site in the plant (augmented reality). Operating instructions or measurements, among other things, are shown on the display. Employees are taught how to handle new digital technologies as part of their initial and continuing training.

18 – Creating Chemistry

Catalyzing digital transformation to build the Refinery of the Future

Using IoT technology, Deloitte helped Texmark Chemicals digitally transform their refinery operation. Now, they save time and money using predictive maintenance.
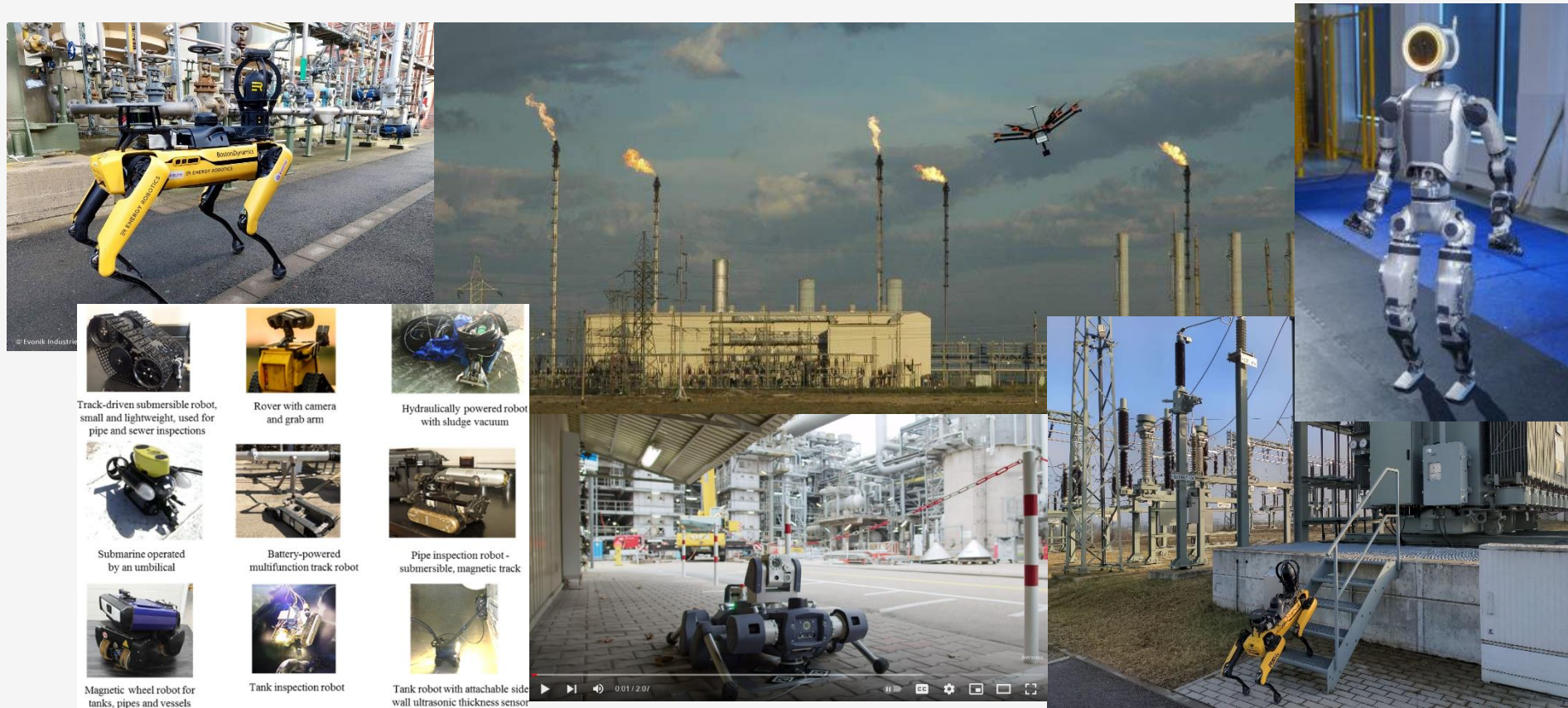
downtime. Predictive maintenance typically reduces machine downtime by 30 to 50 percent and increases machine life by 20 to 40 percent.

How Shell Scaled AI Predictive Maintenance to Monitor 10,000 Pieces of Equipment Globally

March 7, 2022

Internet of Things: Mapping the Value Beyond the Hype, suggested that manufacturers' savings from predictive maintenance could globally total between $240 and $630bn by 2025.

Application: Automated Asset Inspection

Application: Digitally Assisted Maintenance

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current plant → problems / opportunities

solve / transformation / digital transformation / grasp

solutions / new business → future plant

identify plant aspects
maintenance
production
safety / compliance
...

+

use digital technologies
AI
RO
XR
SIM
...

=

design applications
predictive maintenance
asset inspection
aiding maintenance
digital twinning
...